The Road Ahead for the U.S. Auto Industry

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Summary

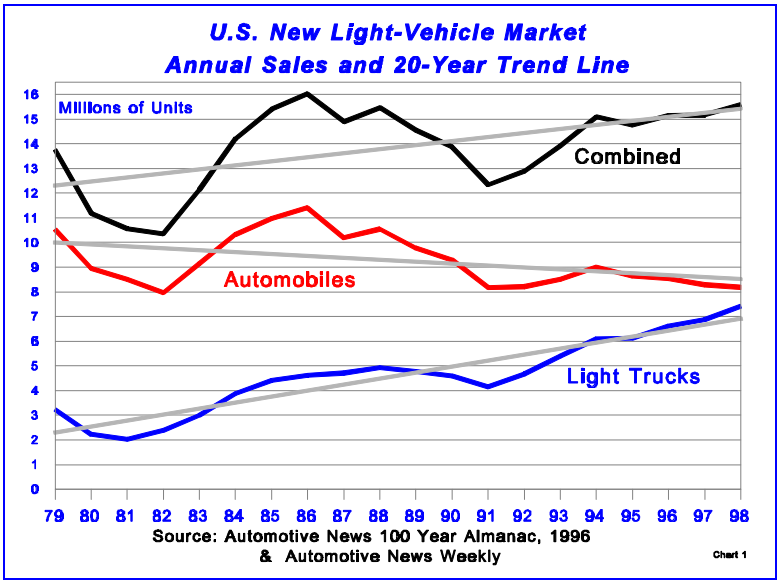
Following the unexpectedly strong 1998 light vehicle market (cars, vans, station wagons, sport utilities, and light pick-up trucks), most analysts—including the corporate economists for GM, Ford, and DaimlerChrysler (formed by the 1998 merger of Daimler Benz and the Chrysler Corporation)—expected that 1999 sales would total about 15.4 million units, a decline of one percent from 1998 levels. However, unexpectedly strong demand in the first quarter could foretell an all-time record year. Import sales are expected to maintain the upward trend that emerged last year, driven primarily by the renewed strength of European product offerings. U.S. production is expected to remain constant or to increase slightly, augmented by increased output at the local plants of Japanese and German producers, and possibly by modest export growth. However, if the anticipated economic recoveries in Asia and South America fail to emerge on schedule, the U.S. vehicle industry could see its exports fall, the U.S. market decline because of weakened exports in other sectors, and face even greater competition from imported vehicles.

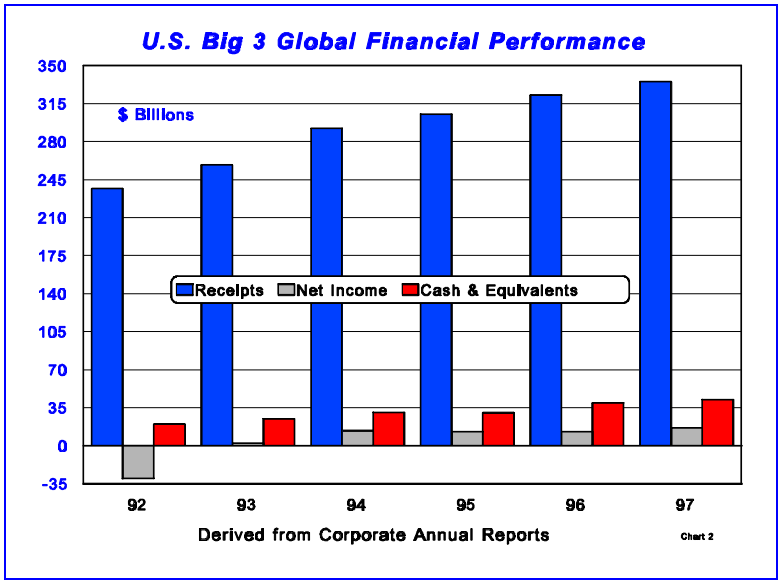
The rapidly evolving global consolidation in the auto industry is expected to have very little impact upon the North American operations of the vehicle producers or employment levels. For their U.S. and foreign suppliers and for vehicle producers in most other countries, the story is different: the consequences of consolidation could be highly significant—both positively and negatively— and in both emerging and developed markets.

Amazing Strength

1998 sales of light vehicles substantially exceeded most forecasters= expectations for a flat market, rising nearly 3 percent to a total of 15.5 million units (Chart 1). It was the first time in U.S. history that a consecutive 5-year period included four years with sales above 15 million units annually. The consequences for the home-grown manufacturers of this unprecedented (and mostly unanticipated) period of prosperity have been substantial.

Between 1993 and 1997 alone, the combined global net income of GM, Ford, and Chrysler totaled $58.8 billion on cumulative sales of $1.5 trillion. 1997 was the best year of the period, producing revenues from their worldwide automotive operations of $335 billion, their highest ever and 4 percent above 1996, itself a record year (Chart 2). The Big 3's 1997 net income jumped 27 percent for the year to a total of $16.4 billion. In addition, their cash on hand increased by 8 percent, reaching $42.4 billion In contrast, the Japanese Big 4CHonda, Mazda, Nissan, and ToyotaCreported 1997 income of $199 billion, down 5 percent.[1] Their net income was $5.4 billion, unchanged. Cash on hand grew 3 percent to $24.2 billion.





In the first nine months of 1998, Big 3 profits fell by 20 percent to $8.8 billion on a 6 percent drop in revenue to $270.2 billion. This was primarily the result of losses at GM, caused by a strike at all but one of its U.S. assembly plants. GM=s income dropped by 75 percent compared with the same previous period, while Ford=s income increased by 8 percent and Chrysler=s by 40 percent.

[1] Converted at prevailing exchange rate. Because of exchange rate fluctuations, caution must be exercised in comparing one year=s converted value to another.

The third quarter was the last

time that Chrysler=s financial results were reported separately. Full year 1998 results will be combined with Mercedes Benz in DaimlerChrysler=s annual report. GM=s full year 1998 report continued to reflect the strike=s impact; net income dropped 56 percent to $3 billion on revenues that slipped 9 percent to $140.4 billion. Ford=s 1998 net income from automotive operations was $4.8 billion, up slightly, on global automotive revenues that declined 3 percent to $119 billion.

1999 Looks Like A Winner B But Not For Trade

Barring any greater impact upon the U.S. economy from the economic problems of Asia and South America, 1999 is expected to produce a record of six consecutive years of domestic sales of light motor vehicles above 15-million units. The U.S. market is in high gear, posting nearly an 11 percent sales gain during the first 3 months of 1999, compared with the same period last year, reaching a total of 3.5 million cars and light trucks. Usually, the first quarter is the weakest, so it suggests that the second quarterC usually the strongestC should be outstanding. Most manufacturers had anticipated a flat 1999 market. All seem surprised by the market=s strength and many now are beginning to wonder if we are headed for the best year in history, one that would top 1986's record of 16 million cars and light trucks. In any event, annual sales of no less than 15.8 million units seem certain.

Unfortunately, a strong domestic market means stronger sales of imported vehicles. U.S. imports of road motor vehicles increased 8 percent in 1998 to $94.7 billion. At the same time, the weakness in foreign markets contributed to a four percent decline in U.S. exports to $24.5 billion. The 1998 trade deficit grew by 13 percent to $70.2 billion. In the first two months of 1999, the gap jumped 33 percent to $13.8 billion.

The economic woes in Asia have played a significant role in curtailing our markets there and, consequently, have contributed significantly to the growing trade deficit. Motor vehicle exports to the Asian region dropped 39 percent in 1998 to $1.5 billion, while U.S. imports from Asia increased by nearly 6 percent to $27 billion. The result was a jump of nearly 11 percent in our deficit with the region, reaching a total of $25.5 billion.

On average, over 50 percent of the U.S. global trade imbalance in motor vehicles in any year is generated by trade with Canada and Mexico where American, Japanese, and German producers have factories producing for the American market. The 1998 imbalance with Canada grew 10 percent to $23.7 billion; with Mexico, 7 percent to $10.8 billion.

Virtually all of the remainder of the deficit is represented by trade with Japan, Germany and Korea. The 1998 deficit with Japan increased 10 percent to $24 billion; with Korea 7 percent to $1.7 billion; with Germany, 25 percent to $9.8 billion. In the first two months of 1999, the deficit with Canada jumped 43 percent to $5.4 billion. With Mexico, 48 percent to $1.8 billion. The deficit with Japan rose 15 percent to $4.6 billion, while the imbalance with Korea declined by 2 percent to $345 million. The deficit with Germany grew 32 percent to $1.6 billion[2].

The Domestic Market Evolves

Continuing their rush to the front, light truck unit sales advanced 8.2 percent in 1998, while passenger car sales sagged by 1.6 percent. The net result was a 3-point jump to a 48 percent light truck share of the total market. At the last, and all-time peak in total U.S. light vehicle sales—1986, 16 million units—light trucks supplied just 29 percent of the market. Their share has risen every year since, and in the opinion of many analysts will exceed 50 percent in the near future. Before that happens, however, the clear delineation that exists between passenger cars and consumer-oriented trucks most likely will disappear.

Demand is growing for more-upright, more-versatile, hybrid passenger vehicles that blend the best attributes of passenger cars with the carrying capacity and ruggedness of utility trucks—while still being exciting to the senses. Adding momentum to the trend is the convergence underway between the federal government=s safety standards for light trucks and passenger cars, as well as a narrowing of the differentiation in fuel economy standards and emission standards for these two segments of the market. Left relatively untouched by this >defragmentation= of the market, perhaps, will be the simple pick-up that kicked off the whole concept of the consumer truck. However, even here, the appeal of a 4-door passenger car combined with an open, but shortened cargo box is beginning to develop a following that quickly could return the simple pick-up to a minuscule and relatively unprofitable share of the consumer market.

The first of the new breed of vehicles, built mostly upon car platforms and >disguised= to appeal as civilized and luxury sport utility vehicles (e.g., Honda CRV, Mercedes M-Class, Subaru Forester, and Toyota RAV4) first appeared in 1997. Judging by the latest vehicles on

[2] A more extensive trade data review will be provided in the Office of Automotive Affair=s new annual discussion paper, ATrading Trends in Road Motor Vehicles,@ following receipt of 1999 first quarter data.

display during the early 1999 >car= shows (e.g., Ford Explorer Sport Trac, Oldsmobile Recon, Nissan Xterra, DaimlerChrysler PT Cruiser) many more are on the way. All of the major and most all of the minor producers are committed to developing new combinations of practicality, price, performance**C**and styling**C**that will capture high profit sales in the relatively flat new-vehicle market that is expected to characterize the United States, as well as most other mature, developed markets for the next several years.

The Industry Evolves Faster

For more than ten years, various industry pundits have raised alarms over the growing excess production capacity of the global motor vehicle industry. By some estimates, excess capacity now stands at between 20 million and 25 million units, the equivalent of 80-100 assembly plants around the world [3]. Many analysts have consequently predicted the coming of a cosmic dustup that will leave standing no more than ten, and, perhaps, as few as five viable international players, from a field of more than 50 major and minor participants. Except for a few early acquisitions of ailing minor players by the majors, however, nothing significant happened in the intervening years until November 1998 when Daimler Benz and Chrysler Corporation launched the largest ever acquisition-merger in the auto industry. Ranked seventh and fifteenth worldwide on the basis of production volume in 1997, DaimlerChrysler (DCX) is now the world=s fifth largest assembler, trailing GM, Ford, Toyota and Volkswagen, and displacing Fiat and Nissan. (In terms of sales income, DCX ranks third behind GM and Ford.) In January 1999 Ford made a $6 billion offer to acquire Volvo=s passenger car business which Volvo=s stockholders accepted in early March. GM increased its position in Suzuki to 10 percent in late 1998, and followed up earlier this year by raising its share of Isuzu to 49 percent.

Other events in 1998 included Toyota increasing its already controlling position in Daihatsu to 51 percent, and in the heavy truck maker, Hino, to 20 percent. VW bought Rolls-Royce=s physical plant and all assets except the Rolls brand name, which was acquired separately by BMW in a surprise deal. VW obtained license to use the Rolls name until 2003, and has full control of Rolls-Royce=s Bentley brand. Hyundai successfully outbid Ford in late 1998 for ownership of Kia, along with its considerable debt. (Both Mazda, of which Ford owns a controlling 33 percent, and Ford itself, have maintained their 8 percent and 17 percent investment positions in Kia.) Nissan placed itself on the market in late December

[3] These estimates are often misleading, as they don=t reflect the nature of the existing capacity. For example, in the Asian countries, excess capacity is estimated at upwards of 10 million units. To use most of these plants to produce competitive, world-class products, however, would first require massive investments for product design and plant modernization.

1998. DaimlerChrysler expressed serious interest but withdrew from its negotiations with Nissan in early March. Renault stepped forward with a $5.4 billion offer that Nissan accepted in exchange for 37 percent of the company=s stock.

When consummated (which may require that Renault obtain assistance as the price reportedly exceeds the firm=s current cash reserve), the new entity will rank fourth in unit terms, just ahead of the VW group.

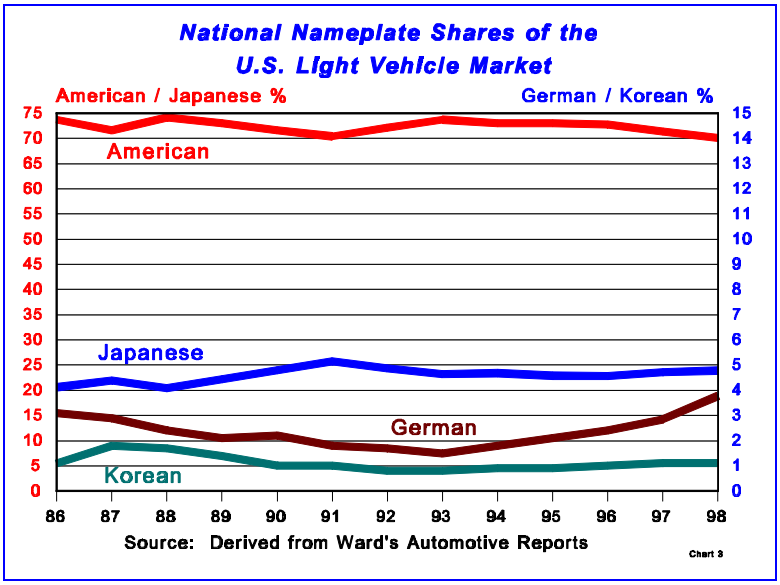
If rumors are to be believed, the auto manufacturers (as well as the heavy truck producers) are not done yet. DaimlerChrysler, Volkswagen, PSA (Peugeot-Citroen), and Fiat are reported to be looking for additional acquisitions, mergers, or >magnified= cooperative agreements. Ford is probably not done. GM already owns half of Saab=s car line and is expected by most analysts to exercise its right to acquire the remainder this year, and perhaps add another company to its stable as well. Firms rumored to be on the market include Mitsubishi Motors; possibly Proton, of which Mitsubishi owns 30 percent; perhaps BMW or its Rover subsidiary; and most likely, Fuji Heavy Industries= Subaru line. Press reports also suggest that with prodding from the Korean government, Samsung Motors may be absorbed by Daewoo, which may be seeking to renew ties with GM that were severed in 1992. Honda reportedly is intent on growing the old-fashioned way, by internal expansion.

None of these actions are likely to have measurable near-term impact upon the U.S. economy, nor the existing operations of the resident vehicle producers, nor upon their U.S. employees. For others, including U.S. and foreign suppliers, as well as vehicle producers in most other countries the story is quite different: the consequences could be highly significant**C**both positively and negatively**C**and in both emerging and developed markets. Once the consolidation is completed, the only way that independent start-up vehicle producers in the emerging markets will remain viable is with the protection of their host governments.

Market Shares Continue to Shift

The traditional Big 3 (GM, Ford, and Chrysler without Daimler) share of the 1998 market for passenger cars and light trucks dropped to 70 percent (Chart 3), down 1.3 points from the previous year and lower than their previous trough of 70.4 percent in 1991. Volume was 10.9 million units, up 1 percent. In the last peak market, 1986, the Big 3 share was 73.3 percent. By 1988, their share rose to 73.9 percent. It has drifted steadily downward since 1993.

Big 3 brands have been losing position in the passenger car segment for several years. Their 1986 passenger car shareCC71.5 percentCCslipped to 60.5 percent in `97 and dropped to 57.8 percent in `98. U.S. brands have been able to take comfort (and most of their profits) from their dominance of the light truck market, where they have more than held their own against the Japanese producers of both pickups and minivans, increasing their share of this segment to 86.2 percent in 1996. In 1997, however, their share slipped to 84.5 percent.



For full year 1998, the Big 3's share of the van segment dropped 2.6 points to 90.8 percent. While their pickups gained 2.2 points to 89.6 percent, their share of the sport utility segment also fell, dropping two points to 75.2 percent. The net result was that the Big 3's combined light truck share dipped eight-tenths of a point to 83.6 percent.

Given current trends, the Big 3 will probably continue to lose share during 1999. Thus, to maintain profitability they must work even harder than they now are to reduce design, production, marketing, and operating costs.

GM=s share of the overall light vehicle market fell to 29 percent in 1998, losing nearly two points of a share (on a 3 percent drop in unit sales). Its position now is the lowest since the corporation was formed, mostly because of a 54-day strike that shut all but one domestic plant of the nation=sCand the worlds=Clargest producer. GM expects that its newly introduced pickup truck and its highly ambitious schedule of new offerings (reportedly, one every 28 days on average during the next 17 years), will help restore its fortunes without recourse to costly rebates and subsidized lease rates. Ford lost a quarter-point of market share in ›98, dropping to 24.7 percent, but volume gained 1.5 percent. Chrysler=s share gained one point to 16.2 percent, on a 9 percent volume gain.

Overall, ›98 sales of Japanese brands (including those produced in the United States) totaled

3.7 million units, up 4 percent. Their share gained 0.3 points, reaching 23.9 percent, compared with a peak share of 25.8 percent in 1991. Toyota was the big gainer. Its 11 percent volume increase added six-tenths of a point to its share, now 8.8 percent. Suzuki=s 29 percent unit gain was greater, but its overall share is just one-fourth of a percent. Nissan continues to struggle, continuing its nearly 5-year slide, falling 15 percent in volume and

eight-tenths of a point drop in share to 4 percent. Honda had another solid year, gaining 7 percent in volume and reaching a 6.5 percent share of the U.S. market, its best ever.

During 1998, Toyota introduced its new, U.S.-built minivan, which sold well from introduction. At years= end, Honda introduced its new Canadian-built minivan; the largest Honda vehicle ever produced, as well as the largest minivan on the U.S. market. In its first few months on the market, it is being hailed as a major challenge to all of its competitors. In 1999, Toyota will begin assembling its first full-size, V-8 powered pickup truck in a new Indiana plant.

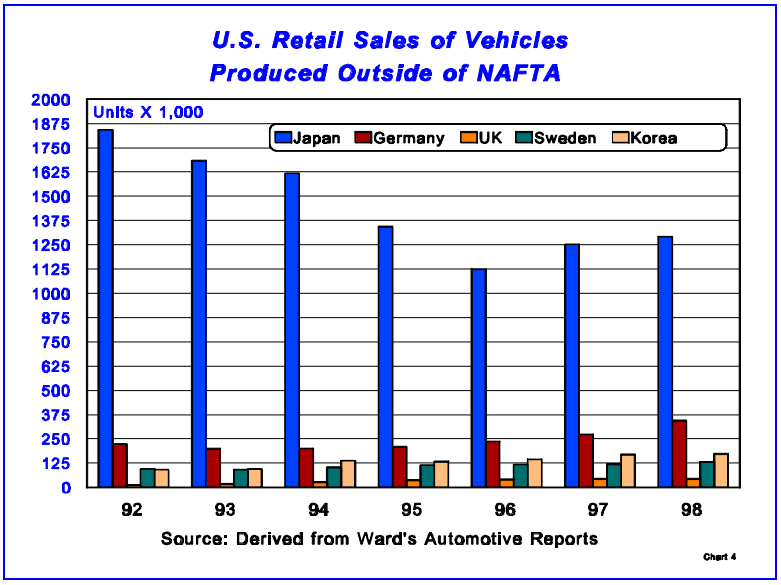
Market share for the German brands grew by 0.9 points in 1998 to 3.8 percent, their highest level since their last peak in 1986 (3.1 percent). The German brands all advanced during the period. Collectively, their sales grew by 37 percent to 586,000 units. Their total share grew by one point to 3.8 percent. VW is staging the strongest comeback, gaining 56 percent in volume, scoring a 1.7 percent market share on sales of 267,196 units. Mercedes= sales are up 44 percent, reaching 170,245 units. Its new, U.S.-built luxury sport utility has done particularly well. BMW gained 7 percent (131,559 units). Porsche=s sales jumped 35 percent (17,239 units).

The Korean overall share in 1998, all supplied by imports, was unchanged at 1.1 percent. Volume gained 2.7 percent, reaching 173,000 units. Nonetheless, the volume of vehicles imported from Korea during 1998, fell 6 percent[4], as the firms concentrated on working down excess U.S. inventories. Kia=s sales grew nearly 50 percent to 82,893 units, while Hyundai=s dropped 20 percent to 90,217 units.

Sales of Imports Expected to Increase

[4] Official U.S. government statistics for imports of passenger vehicles and light trucks do not match annual retail sales data for imported vehicles. Partially, this is because of time lags that can occur between when vehicles enter the United States and when they are sold. For example, a December import may not be sold until January of the following year, or even the year after that. Also, some imported vehicles may not be sold in the U.S. retail market. Further, the Harmonized Tariff System definition of passenger vehicles and light trucks does not match precisely the definition of such vehicles used in industry retail sales statistics.

U.S. sales of imported light vehicles (i.e., those physically assembled in plants outside of North America) peaked in 1986 at 4.2 million vehicles, 26.2 percent of the total market. Nearly 80 percent of these vehicles, 3.3 million units, came from Japan, and equaled 20.7 percent of the market. German imports supplied 429,000 units, a 2.7 percent share. In each of the following 10 years, sales of imports declined steadily until reaching 1.7 million units in 1996, when they accounted for 11.3 percent of the total market. In 1997, sales of imports grew by 224,000 units and their share increased to 12.8 percent (Chart 4).



In 1998, import sales continued to increase, growing 5.1 percent to reach a total of 2.024 million units. Their share of the overall market rose slightly to 13 percent. Japanese import sales also increased for the second consecutive year, growing by 3.2 percent to 1.3 million units. This was 8.3 percent of the market, the same as in 1997. Much of the Japanese gain was the result of strong demand for sport utility vehicles that their U.S. plants are still not yet equipped to fully supply. Greater percentage gains were produced by German brand imports, whose sales jumped nearly 26 percent to 344,000 units and increased their overall share to 2.2 percent. The German gain is the result of a shift in marketing philosophy that has produced passenger cars that are more appealing to American buyers, and that are more attractively priced.

Besides Korea, there are only two other ›country brands‹ supplying significant quantities of imports to the United States: Great Britain and Sweden. Sales of British imports peaked most recently in 1987 at 40,000 units, 0.26 percent of the market. Sales declined steadily until falling to 13,000 units in 1992. They then began to rise steadily, reaching 44,000 units in 1998, 0.28 percent of the market. Swedish imports declined from their 1986 level of 189,000 (0.69 percent share) until reaching 92,000 in 1993. They have risen steadily since, reaching 132,000 units in 1998, a 0.34 percent share.

Japanese firms continue to emphasize local production to serve their best international market and will undoubtedly continue to add U.S. capacity. However, low volume, high value sport utilities and luxury passenger cars probably will be shifted to the United States only in limited instances. Isuzu, Mazda, Mitsubishi, Nissan, and Subaru all lack either the resources, the U.S. sales volume, or both, that would enable them to add to their U.S. capacity. Moreover, all of them are struggling with excess capacity in Japan.
Imports from Germany also will continue to grow. VW is expected to begin construction of a new North American plant this year, but it also has shifted production to Germany from Mexico of the popular Golf. (While VW=s Passat model and its Audi brand are imported from Germany, all other VW brands sold in the United States are sourced from Mexico and are therefore treated by Ward=s Automotive Reports, from whom we derive our market sales data, as a >domestic= sale.) BMW=s imports, including the 3 Series, which was briefly produced in the United States before making way for the Z3 sports car, continue to attract buyers. Except for adding production of a new sport utility to its South Carolina plant, the firm has no announced plans for expanding in North America.

Mercedes brands, with the exception of their sports utility, will continue to be sourced from Germany for at least the next several years. DaimlerChrysler apparently has no near-term plans to utilize Chrysler=s U.S. facilities for Mercedes-branded vehicles. Porsche sales, which have been on the rebound since their near collapse in 1993, are growing strongly on the strength of a pared down but greatly improved two-vehicle product line. Nonetheless, their contribution to total import sales, in unit terms, probably will remain small far into the future.

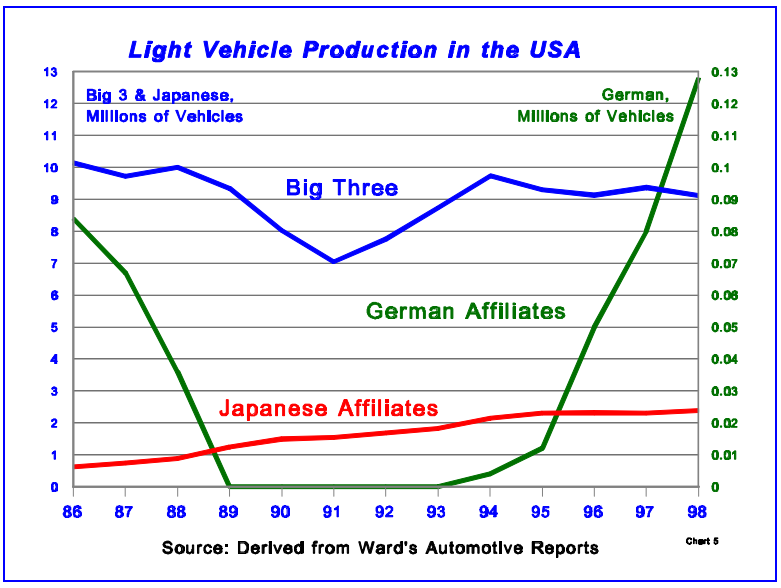
Sales of imported British and Swedish brands will probably spike upward in the near-term, especially for Jaguar, Volvo and Saab, all of whom are finding competitive advantages from the affiliations with Ford and General Motors. It is difficult to evaluate the trend for Korean imports. Although quality is improving, none of the three suppliers (Daewoo entered the market in early 1999) are yet able to compete on any aspect other than price.

Production May Produce Small Gain

U.S. total light vehicle production (Chart 5) in 1998 slipped 1 percent to 11.6 million units, mostly the result of lost production at GM=s striking assembly plants. The outlook for 1999 is for a slight increase, perhaps rising to 12 million units. However, 1999 is a >contract year,= during which the UAW will negotiate its next 3-year agreement with each of the Big 3. Past experience suggests that production disruptions are possible. (See the employment section for additional commentary). The potential impact upon corporate profits from even so slight a loss as one-tenth of one point of production volume is enormousCeach tenth represents approximately $200 million in factory sales.

The Big 3's total 1998 output slipped 2.6 percent to 9.1 million units. Passenger cars were off 9 percent, falling to 3.6 million units. Trucks gained 2 percent, reaching 5.6 million. GM=s production totaled 3.8 million units, down 9 percent, including a 13 percent drop in automobile production. While output at both Ford (3.5 million units) and Chrysler (1.8 million) was up for the year (0.6 percent, Ford; 6.0 percent, Chrysler), both firms also had lower passenger car production. Ford=s declined by 6.1 percent; Chrysler by 1.6 percent.

Japanese firms have been displacing their own imports into the USA by transferring production to the NAFTA regionCprimarily the United States. 1998 production for the seven companies with U.S. manufacturing operations grew 3 percent, reaching a total of 2.4 million units. Light truck output jumped nearly 20 percent, while car output remained at 1.9 million units. Honda=s auto production increased 7 percent, reaching 695,000 units. Nissan=s problems continued to negatively impact its U.S. assembly operation. Total production in Nissan=s Tennessee plant, rated the most efficient of all plants in the United States by Harbour & Associates, plummeted 23 percent to 309,000 units. Nissan began shifting production of its slow-selling Sentra from its U.S. plant to Mexico in 1997 and will complete the transition in early 1999. The released U.S. capacity will be used for a



redesigned pick-up and an all new sport utility. At Toyota=s U.S. plants, production increased by 6 percent overall, reaching 838,000 units. In late 1998 Toyota opened a new light-truck plant in Indiana with an annual straight-time capacity of 100,000 units. This follows a 1997 expansion of their Kentucy plant capacity by 50,000 cars and 50,000 vans.

German firms increased their U.S. production by 55 percent in 1998, reaching a total of 127,600 units. Both BMW and Mercedes Benz have capitalized upon NAFTA by building plants in the United States to serve all three markets. They are also exporting from the United States to other countries, including Germany and Japan. Mercedes added 15,000 units in 1998 to its original 65,000 unit capacity at its Alabama plant for its luxury sport utility. Global demand has been so strong that Mercedes has decided to duplicate assembly in Chrysler=s existing Austrian facility, using output there for the European markets.

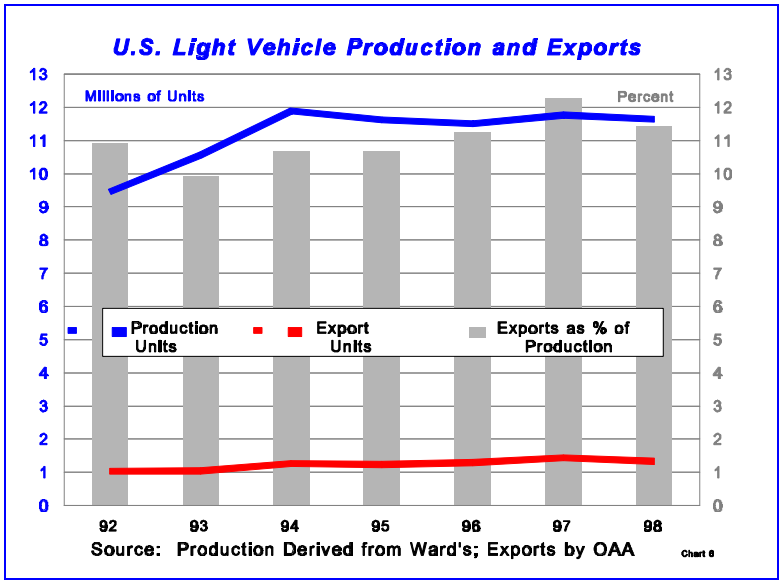
In its first full year following start-up, Mercedes >98 U.S. production of its luxury sport utility was up 274 percent, reaching 73,000 units. Production at BMW=s South Carolina plant fell 13 percent to 54,800 units, the first decline since the plant opened in 1995. This was the result of adjusting inventory to allow for the introduction of a >face-lifted= sports car. Also, BMW installed a second assembly line that in 1999 will produce the firm=s first-ever hybrid sport utility vehicle. Early >98 press reports speculated that Volkswagen, which ceased U.S. production in 1989, may build a new factory in the NAFTA region to complement its existing Mexican plant, breaking ground possibly as soon as 1999. Current press reports suggest that, instead, VW may import vehicles from its Spanish (SEAT) or Czech Republic (Skoda) subsidiaries, or from its Brazilian facilities.

Exports May Enjoy Modest Growth

U.S. passenger vehicle and light truck export shipments by manufacturers and independent entrepreneurs fell 8 percent in 1998 to a total of 1.3 million vehicles. Exports thus accounted for 11.5 percent of total U.S. production of cars and light trucks, nearly the same as 1992 (Chart 6). When shipments to Mexico and Canada are excluded, the share becomes an even more modest 3.5 percent.

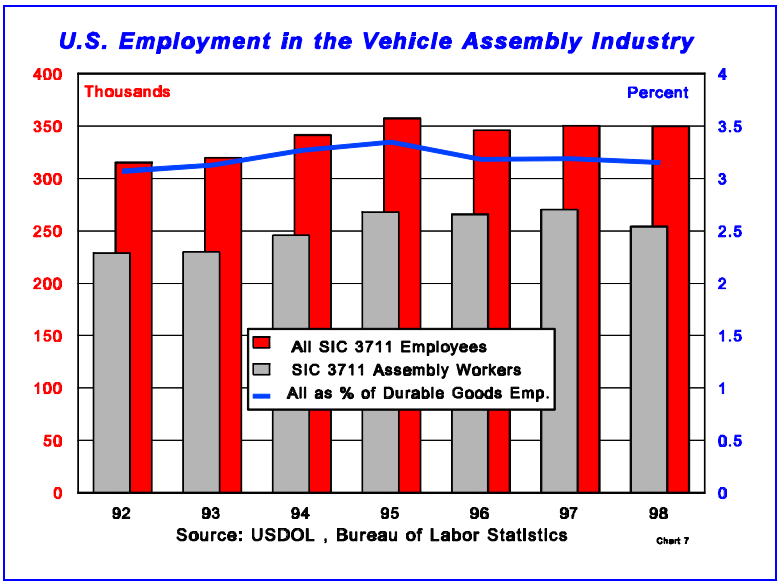
Given that all manufacturers are intent upon localizing production for large markets or within regional blocks of smaller developing markets, it is unlikely that exports will become a major component of U.S. production plans. Three factors contribute to this situation.

First, growth in the global motor vehicle market will be led by the expected, but now delayed, surge in the emerging markets of Asia and Latin America (in particular, Argentina, Brazil, China, India, Indonesia, Korea, Malaysia, Mexico, Taiwan, Thailand, and Venezuela). Some industry forecasters estimate that the global vehicle fleet will reach one billion units in 2015, compared with 663 million in 1995. The developing markets are expected to grow from a 25 percent overall share to 40 percent. Most U.S. manufacturing capacity, however, is dedicated to producing vehicles that are designed strictly to appeal to the uniquely American market. Only Canadian buyers share, somewhat, similar taste in motor vehicles. With the exception of Mexico and Saudi Arabia, most U.S.-made light vehicles generally are perceived by consumers in the emerging markets as being either unsuitable, unappealing, or unaffordable. A notable exception to this generalization are sport utilities, which are developing significant niche markets in many of these countries.



The second factor that limits U.S. exports is the belief (shared by vehicle manufacturers around the world) that to be competitive in the emerging markets, they must invest directly in them, rather than relying upon higher-cost shipments from their existing factories. The third limiting factor, closely allied with the second, is the plethora of regulations in emerging markets intended to promote and protect local vehicle assembly. Often, local governments require foreign manufacturers to undertake joint-ventures with local partners as the price of market entry. They demand from them a high level of local content, and offer to them high tariff walls and strict quotas that will protect them from third-party imports. Some firms actively seek such arrangements, the better to limit access to the market by their late-arriving competitors.

Shipments to the leading U.S. export market, Canada, fell 3 percent in 1998 to 851,000 units, even as that market grew by 1 percent to 1.43 million vehicles. U.S. shippers may be able to regain lost ground in 1999. The Mexican market grew sharply in 1998, up 32 percent to 643,000 cars and light trucks, while U.S. exports to Mexico advanced a modest 1.5 percent to 132,000 units. Stronger growth may be possible for 1999. Overall sales prospects in the next largest export markets, Germany and Japan, suggest that U.S. shipments to them (and to nearby countries) may continue to decline in 1999. In the future, DaimlerChrysler is likely to generate increases in U.S. exports to both nations, by making use of its strong Mercedes distribution networks in those markets.



But Employment Will Moderate

In 1998, the U.S. motor vehicle industry (SIC 3711, Motor Vehicles and Passenger Car Bodies), employed an average of 254,100 production workers per month, a decline of almost 6 percent from the previous year (Chart 7). These numbers are distorted by the GM strike, which reduced average employment from the previous July=s 256,800 average to 178,000. Without this anomaly, 1998 average employment would have been higher than reported.

Compensation in the auto industry is among the highest in the United States. Assembly workers garnered average hourly earnings (in addition to generous benefits packages) of $21.81 in 1998, compared with the national average for all manufacturing industries of $13.49. In 1997 they earned $21.63, compared with the national average of $13.17. U.S. assembly workers produced an average of 47 cars and trucks of all weight classes (12 million total) per employee in 1998, compared with 45 vehicles in 1997. During 1978, the all-time peak production year, U.S. vehicle output was 12.899 million units. The 349,100 hourly employees each produced an average of 37 vehicles that year.

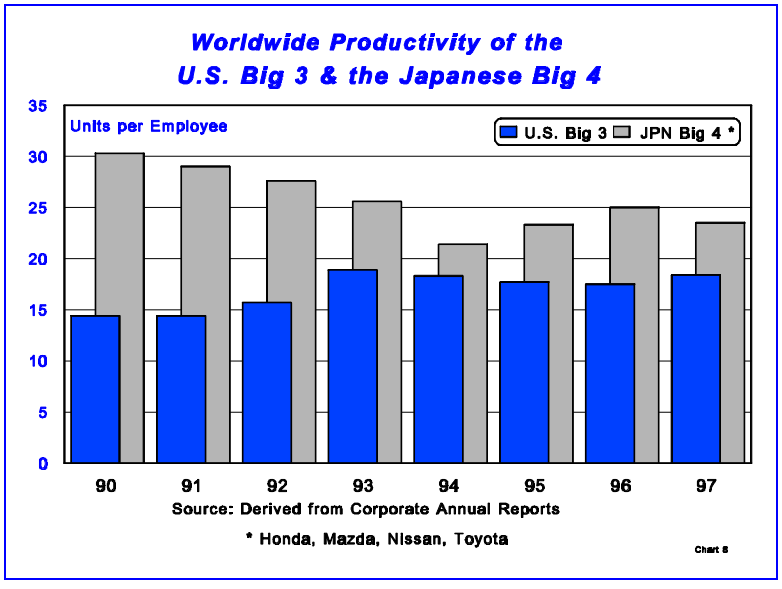
The Japanese-owned vehicle producers have long been recognized as the most efficient among all the global vehicle producers in terms of vehicles produced per assembly worker employed. Comparing total (vehicle) output to total (corporate) employment (TOTE), produces an interesting point: The gap between the American Big 3 and the Japanese Big 4 has closed significantly (Chart 8).

In 1990, the Big 3 produced just 14.4 factory unit sales for each employee on the corporate payroll. The Japanese Big 4 produced 30.3, yielding a 53 percent differential in their favor.

By 1997, the Japanese Big 4 had dropped to 23.5 units per employee because of rising employment and lower output, while the U.S. Big 3 had increased to 18.4 units per

employee (reduced payroll, increased output). Thus, the current differential in favor of the Japanese producers has been reduced to 22 percent.

U.S. motor vehicle industry employment probably will continue to decline over the long term, because of the industry=s unrelenting emphasis on increasing productivity. Possibly accelerating the trend is the industry=s experiment with >modular assembly= that is now being used in Brazil by VW, and where it is being emulated by GM, Ford, and Chrysler.



Modular production passes both engineering and subassembly responsibilities to a limited number of >Tier 1= vendors. They produce fully built-up modules, such as >4-corner suspension sets= which the vendors then attach to a vehicle chassis as it passes their stations on the assembly line.

Contrast this with the traditional approach of a multitude of individual vendors supplying boxes of individual components to the vehicle manufacturer=s factory gate. Those components are then individually combined in the factory by the vehicle

manufacturer=s employees and subsequently attached to each vehicle. The modular technique enables vehicle manufacturers to reduce their employment rolls (perhaps, by as much as 30 percent), and may also help suppliers to reduce theirs, if they subsequently can rationalize their own operations. Regardless, the vehicle assemblers expect cost reductions, since workers employed by the parts suppliers are generally compensated at lower rates.

In 1996, DaimlerChrysler renovated its just acquired Conner Avenue Plant in Detroit, and initiated a very small scale version of modular assembly operations for the production of both the Dodge Viper sports cars and the Plymouth Prowler pseudo-hot rod. During 1999, General Motors= Saturn subsidiary may be the first plant in the U.S. to experiment with modular assembly for mass production. Dubbed AYellowstone@ by General Motors, GM is also reported to be considering building new modular plants in both Ohio and Michigan to assemble small cars. The firm estimates that its total vehicle production cost savings could reach 20 percent when the technique is fully implemented.